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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,373	01/17/2006	Vladimir Sheiman	XA-11616	5191
181 7590 08/03/2010 MILES & STOCKBRIDGE PC 1751 PINNACLE DRIVE SUITE 500 MCLEAN, VA 22102-3833				
EXAMINER				
OSTRUP, CLINTON T				
ART UNIT		PAPER NUMBER		
3771				
NOTIFICATION DATE		DELIVERY MODE		
08/03/2010		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary**Application No.**

10/525,373

Applicant(s)

SHEIMAN, VLADIMIR

Examiner

CLINTON OSTRUP

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/29/10, 5/4/10 & 6/3/10.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18, 19, 21, 24-32, 34, 35 and 39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18, 19, 21, 24-32, 34, 35 and 39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 April 2010 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-849)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office Action is in response to Applicant's amendment filed April 29, 2010. As directed by the amendment, claims 18, 21, 24-2-29, 31, 34-35 (35 renumbered as 40) and 39 have been amended. No new claims have been added and claims 1-17, 20, 22-23, 33 and 35-38 are cancelled. Thus, claims 18-19, 21, 24-32, 34-35 (35 renumbered as 40), and 39 are pending in this application.

Claim Objections

2. Claims 28-29, 31 and 35 are objected to because of the following informalities: claims 28-29 and 31 are objected to as having improper status identifiers. These claims are identified as "(Previously Presented)" but show amendments thereto. For examination purposes, the claims were read with the amendments. Claim 35 is objected to because it has been listed twice. Once as a "(Currently Amended)" claim and once as a "(Cancelled)" claim. Moreover, claim 35 was described in the "STATUS OF CLAIMS" on page 8, second paragraph as being cancelled. Thus, for examination purposes claim 35 has been considered cancelled and the examiner has renumbered the claim as new claim 40. If applicant would like to continue prosecution of the subject matter of claim 35, it must be reinstated as a new claim (i.e. claim 40), as a canceled claim can be reinstated only by a subsequent amendment presenting the claim as a new claim with a new claim number. See" MPEP 714 (II) (D). Appropriate correction is required.

Drawings

3. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Evidence that figure 1 discloses only that which is known in the prior art can be found in the specification at page 6, lines 4-5 and page 7, line 4 - page 8, line 9. Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 18-19, 21-27, 30-32, 34-35 (renumbered as 40), and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishikawa (4,410,139) and further in view of KHMELEV et al (RU 2070062 C1), based on the English translation provided by The McElroy Translation Company for the United States Patent and Trademark Office (PTO 09-2827), herein referred to as KHMELEV.

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3. Regarding claim 18, Nishikawa discloses a nebulizer (figure 6) comprising a container (lower portion of 1) adapted to contain a liquid (A) to be nebulized; a tubular energy transmitter (30 & 31) including an acoustic transmitter pipe (30 as described in col. 3, lines 25-30) having one end (lower end) immersed in the liquid proximate and spaced from the container (via 32); an aerosol tube (middle portion of 1) around a portion of the acoustic transmitter pipe (30); an energy source (4) being operatively coupled to the container (lower portion of 1) for nebulization of the liquid (A) and being configured for transmission of energy to a focal region (C) of the liquid proximate said one end of the acoustic transmitter pipe(30) whereby said liquid (A) is forced toward the upper end of the nebulizer device and nebulized within the aerosol tube.
4. However, Nishikawa lacks the specific teaching of the focal region of the liquid proximate one end of the acoustic transmitter pipe whereby the liquid is forced toward an opposite end of the acoustic pipe.
5. KHMELEV teaches an ultrasonic nebulizer (figure) with a focal region (20) proximal to the tubular energy transmitter pipe (17) whereby the liquid is forced toward an opposite end of the pipe.
6. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the nebulizer device disclosed by Nishikawa by utilizing a bowl shaped ultrasonic transducer, as taught by KHMELEV, that would direct the focal region to an area proximate to the tubular energy transducer pipe and then force liquid toward the opposite end of the transducer pipe in order to form a nebulizer

that would assure the liquid is completely used and that there will be high stability in the disperse composition of the aerosol and its density.

Regarding claim 19, KHMELEV teaches the energy source (2, 3, and 4) is positioned below the container (7).

Regarding claim 21, the acoustic transmitter pipe (30 of Nishikawa) is positioned so that said one end is proximate the bottom of the container. See: figures 6 & 7 of Nishikawa.

Regarding claim 24, the combined dereferences teach the internal diameter of the aerosol tube (upper portion of 1 of Nishikawa) is greater than an outer diameter of the acoustic transmitter pipe (30 of Nishikawa) at the opposite end of the tubular energy transmitter.

Regarding claim 25, the aerosol tube (upper portion of 1 of Nishikawa) of the combined references is positioned so that it is substantially coaxial with the tubular energy transmitter (30 of Nishikawa).

Regarding claim 26, the nebulizer of the combined references has an aerosol tube (upper portion of 1 of Nishikawa) that is connected to the opposite end of the tubular energy transmitter (30 of Nishikawa via 31, 32 and lower portion of 1).

Regarding claim 27, the device of the combined reference has an energy source (2, 3, and 4 of KHMELEV) that vibrates the liquid proximate the opposite end of the acoustic transmitter pipe (30 of Nishikawa).

Regarding claim 30, the device of the combined references uses an energy source that comprises an ultrasonic transducer (2, 3, and 4 of KHMELEV) for transmission of ultrasonic radiation energy.

Regarding claim 31, the device of the combined references, uses an ultrasonic transducer (2, 3, 4) that has a concave shaped surface. See figure of KHMELEV.

Regarding claim 32, the ultrasonic transducer (2, 3, and 4 of KHMELEV) of the combined references is arranged to transmit ultrasonic energy to a focal region (20 of KHMELEV) of the liquid.

Regarding claim 34, the internal diameter of the acoustic transmitter pipe (30 of Nishikawa) is **substantially** equal to a diameter of the focal region (20 of KHMELEV).

Regarding claim 35 (renumbered as 40), it is the examiner's position that the tube forming the tubular energy transmitter (30 of Nishikawa) inherently has a higher acoustic impedance than the liquid.

7. Claims 28-29 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishikawa (4,410,139) and further in view of KHMELEV et al (RU 2070062 C1), based on the English translation provided by The McElroy Translation Company for the United States Patent and Trademark Office (PTO 09-2827), herein referred to as KHMELEV, as applied to claim 18 above, and further in view of Sheiman (WO 99/42145 A1).

The combined references teach all the limitations of claim 28, except that the aerosol tube opens at its upper end into an expansion chamber which in turn communicates with an outlet duct (36).

Sheiman teaches an aerosol tube (30) which opens at its upper end into an expansion chamber (28) which in turn communicates with an outlet duct (38).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the ultrasonic nebulization device disclosed by the combined references by placing an expansion chamber at the outlet of the aerosol tube to form a nebulizer that allows for only the smallest particle sized particles to exit the nebulizer.

Regarding claim 29, Sheiman teaches the expansion chamber (inside 28) is adapted (via 31) to return non-nebulized liquid to the container via a drainage pipe (31).

Regarding claim 39, Sheiman discloses a partition wall (wall of 38 within expansion chamber) located to one side of the expansion chamber (28) to separate the outlet duct (38) from the acoustic transmitter pipe (30 of Nishikawa).

Response to Arguments

8. Applicant's arguments with respect to claims 18-19, 21, 24-32, 34-35 (35 renumbered as 40), and 39 have been considered but are moot in view of the new ground(s) of rejection.

9. However, applicant at page 11, second full paragraph, argues that elements 17 and 18 of KHMELEV are not disclosed by KHMELEV as being a tubular energy transmitter and aerosol tube, respectively. Applicant is reminded that these are intended functions of the claimed tubular devices and as applicants may be their own lexicographer, KHMELEV may also be their own lexicographer. Since a tubular "sleeve" (17) is capable of transmitting energy and an "output sleeve" (18) can deliver

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aerosolized particles, as shown in the figure of KHMELEV, these structural components meet the claimed "tubular energy transmitter" and "aerosol tube" as claimed. Therefore, applicant's arguments have not been found convincing, but are moot in view of the amendment and new grounds rejection as described above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CLINTON OSTRUP whose telephone number is (571)272-5559. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Justine Yu can be reached on (571) 272-4835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Justine R Yu/
Supervisory Patent Examiner, Art Unit 3771

/Clinton Ostrup/
Examiner, Art Unit 3771

